

REMARKS

Claims 1-10 are pending in the present application.

The rejection of Claims 1-10 under 35 U.S.C. §103(a) over Roewer et al (US 5,716,590) in view of Corbin et al (US 5,600,040) is respectfully traversed.

The claimed invention is drawn to “a process for preparing trichlorosilan (HSiCl_3) by catalytic hydrodehalogenation of silicon tetrachloride (SiCl_4) in the presence of hydrogen, in which at least one metal or metal salt selected from among the elements of main group 2 of the Periodic Table of the Elements is used as catalyst at a temperature in the range from 300 to 1000°C.” (see Claim 1) The Examiner alleges that the claimed invention is obvious over the combination of Roewer et al (US 5,716,590) and Corbin et al (US 5,600,040). Applicants disagree.

Roewer et al (US 5,716,590) corresponds to EP 0 658 359 A2. EP 0 658 359 A2 is discussed at page 1, lines 13-25 of the present specification, which states:

Various catalysts and the process for converting SiCl_4 to HSiCl_3 in the presence of hydrogen have been known for a long time.

Thus, EP 0 658 359 A2, for example, discloses a process for the catalytic hydrodehalogenation of SiCl_4 to HSiCl_3 in the presence of hydrogen, in which finely divided transition metals or transition metal compounds selected from the group consisting of nickel, copper, iron, cobalt, molybdenum, palladium, platinum, rhenium, cerium and lanthanum are used as unsupported catalysts, these are able to form silicides with elemental silicon or silicon compounds. Problems are, as a result of the strongly endothermic nature of the reaction, the indirect introduction of the heat of reaction and the sintering of the catalyst particles, associated with a drop in activity. In addition, separation of the used finely divided catalysts from the product mixture represents a considerable expense.

Indeed, from the foregoing, it is clear that the present invention provides an advantage over Roewer et al in that the catalytic hydrodehalogenation of SiCl_4 to HSiCl_3 in the presence of hydrogen can be conducted at reduced expense and without the activity drop associated

with the strongly endothermic nature of the reaction, the indirect introduction of the heat of reaction and the sintering of the catalyst particles that plagued the method of Roewer et, which utilized finely divided transition metals or transition metal compounds selected from the group consisting of nickel, copper, iron, cobalt, molybdenum, palladium, platinum, rhenium, cerium and lanthanum as unsupported catalysts.

As recognized by the Examiner, the claimed method differs from the disclosure of Roewer et al in that this reference does not disclose or suggest the claimed method by using “at least one metal or metal salt selected from among the elements of main group 2 of the Periodic Table of the Elements... as catalyst at a temperature in the range from 300 to 1000°C”.

The Examiner cites Corbin et al as allegedly providing motivation to utilize a Group 2 element in a catalytic hydrodehalogenation reaction. This allegation is based on the Examiner’s allegation that Corbin et al disclose a “process to separate HFC-134 isomers (HFC-134 or HFC-134a by hydrodehalogenation).

Applicants respectfully submit that the Examiner’s characterization of Corbin et al as disclosing catalytic hydrodehalogenation is incorrect. Corbin et al do not actually disclose the catalytic conversion of $\text{CF}_3\text{CH}_2\text{F}$ (HFC-134a) or CHF_2CHF_2 (HFC-134), but rather relates to the separation of these $\text{C}_2\text{H}_2\text{F}_4$ isomers from a mixture of the same by preferential sorption on certain activated carbons and inorganic molecular sieves at a temperature and pressure suitable for sorption. With respect to the temperature, at column 5, lines 13-14, Corbin et al specifically disclose that sorption temperatures range from -20°C to 300°C and all Examples are performed at less than 300°C (i.e., at a temperature that is preferably lower than the claimed temperature of catalysis).

Moreover, Applicants respectfully submit that there is nothing in the cited art that would lead the artisan to any realization that transition metals will be comparable to group 2 metals or group 2 salts with respect to catalytic ability for hydrohalogenation as presently claimed.

In view of the foregoing, Applicants respectfully submit that the Examiner's obviousness rejection over the combined disclosures of Roewer et al and Corbin et al is improper. Accordingly, withdrawal of this ground of rejection is requested.

Applicants submit that the present application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

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